VISIONIAS
INSPIRING INNOVATION

QUICK REVISION MODULE (UPSC PRELIMS 2022) GEOGRAPHY

MOUNTAIN BUILDING, ISLAND FORMATIONS AND HOTSPOTS

MOUNTAIN TYPES

On the basis of Time Period

1. **Pre-Cambrian :** 4.6b years ago. E.g. Laurentian Mountain
2. **Caledonian :** 320mya. Mountains of Scotland, Satpura, Aravallis, MahadeoHills
3. **Hercynian :** 240mya. Urals, Pennines, Appalachians
4. **Alpine :** 30mya. Young fold mountains such as Alps, Himalayas, Andes, Rockies .

On the basis of formation

1. Circum-erosional or Relict Mountains : Mountains of denudation. Examples, Vindhyachal ranges, Aravallis, Satpura, Eastern Ghats, Western Ghats etc.
2. **Tectonic Mountains :**

- **Fold Mountains**
  A. Young Fold: Himalayas, Rockies
  B. Old Fold: Appalachian, Urals
- **Block/Horst Mountains**
  Form Rift Valleys. Sierra Nevada, Satpura, Vindhyas
- **Volcanic Mountains or Mountains of accumulation**
  Vesuvius, Kilimanjaro, Fuji
- **Dome Mountains**
  Magmatic intrusion and Upwarping.
  Example: Batholithic domes, Salt domes

Fold Mountains

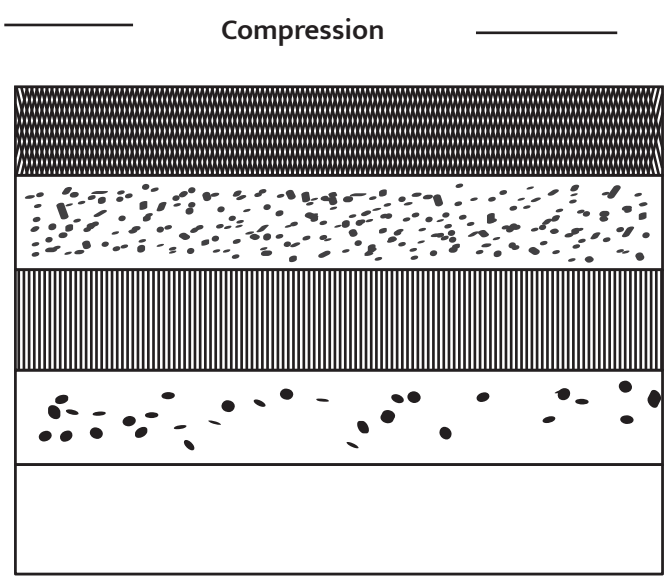

Fig.1 Earth's crush before folding

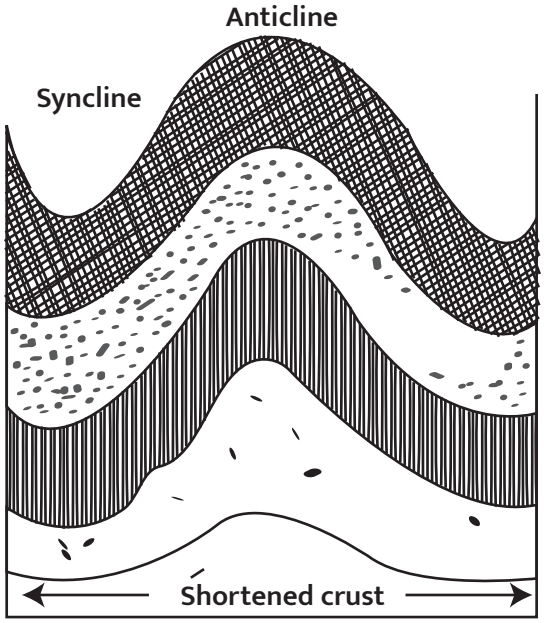

Fig.2 Earth's crush aftore folding

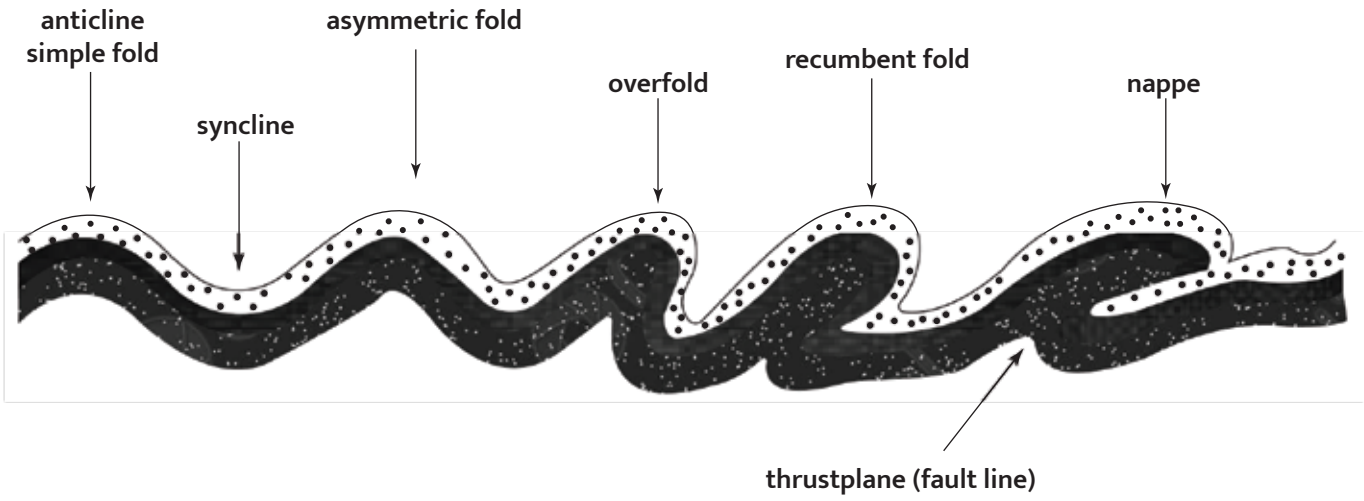

Fig.3 Type of Folding

Block Mountains

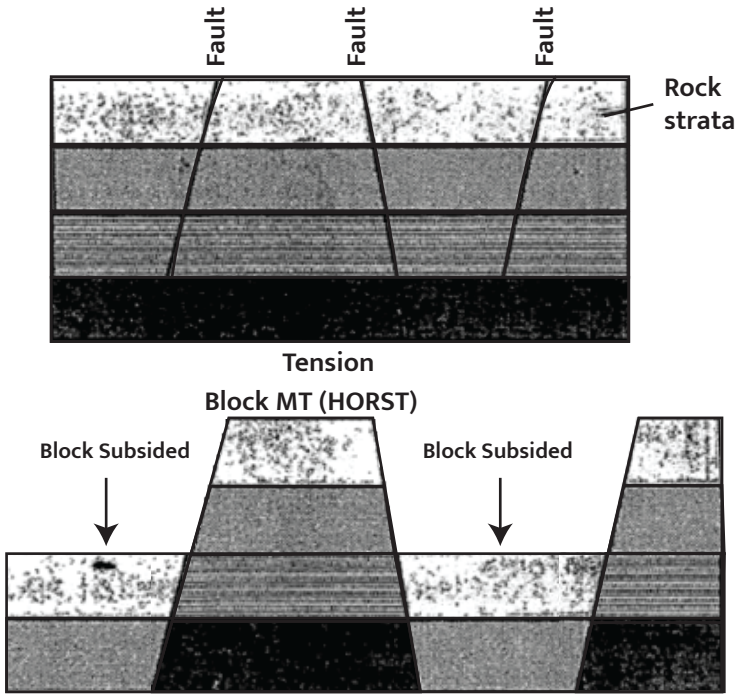

Fig. 4 Block mountains formed by tensional forces

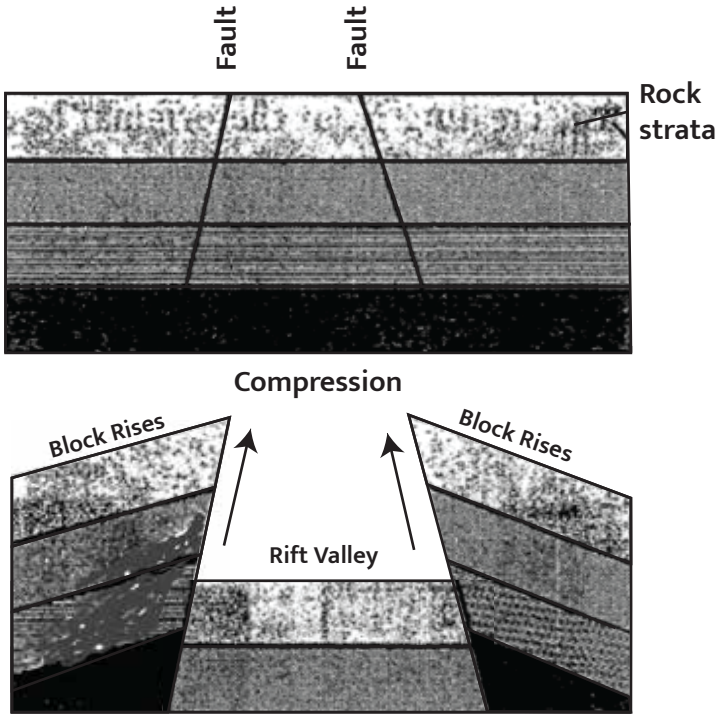

Fig. 5 Rift valleyformed by compressive forces

Fold Mountains

- Bending of Earth's crust
- Youngest and Highest mountains
- Formed of sedimentary rocks, which were deposited in shallow seas
- Length is much more than their width
- Arc shaped mountains (Concave on one side, convex on other)
- Found along margins of continents facing ocean
- Mostly located in two directions i.e. North - South (Rockies and Andes) and West-East (Himalayas and Alps)

Block Mountains

- Tension or compression leads to Faulting
- When crust on both sides subside, the upstanding block becomes Horst or Block mountain. Example: Black Forest
- When central portion between two adjacent fault blocks subside, it forms Graben or Rift Valley. Example: East African Rift Valley
- Most block mountains are formed due to tension rather than compression.

TYPES OF ISLAND

Continental Islands

Connected with mainlandthrough Strait, Channel or shallow Lagoon

1. **Individual Islands:** New Foundland, Madagascar
2. **Archipelagoes:** Island groups with varying shapes and sizes.
   British Isles
3. **Festoon or Island Arcs:** Forms loop around mainland. One tectonic plate subducts other one.
   Andaman & Nicobar Islands, East Indies

Oceanic Islands

No connection with the mainland

1. **Volcanic Islands:**
   Topmost parts of the cones of extinct (mostly) volcanoes. Example: Mauna Loa, Galapagos, Mauritius, Reunion Island

2. **Coral Islands**
   Example: Marshall Islands, Bermuda, Lakshadweep, Maldives

Hotspots

- It is a very hot region deep within the Earth, usually responsible for volcanic activity.
- Sometimes magma heats up groundwater creating Geysers.
- 40 to 50 hot spots around the world, including near the Galapagos Islands and Iceland.
- They can create entire chains of islands e.g. Hawaii.
- They are used to track movement of earth's plates.